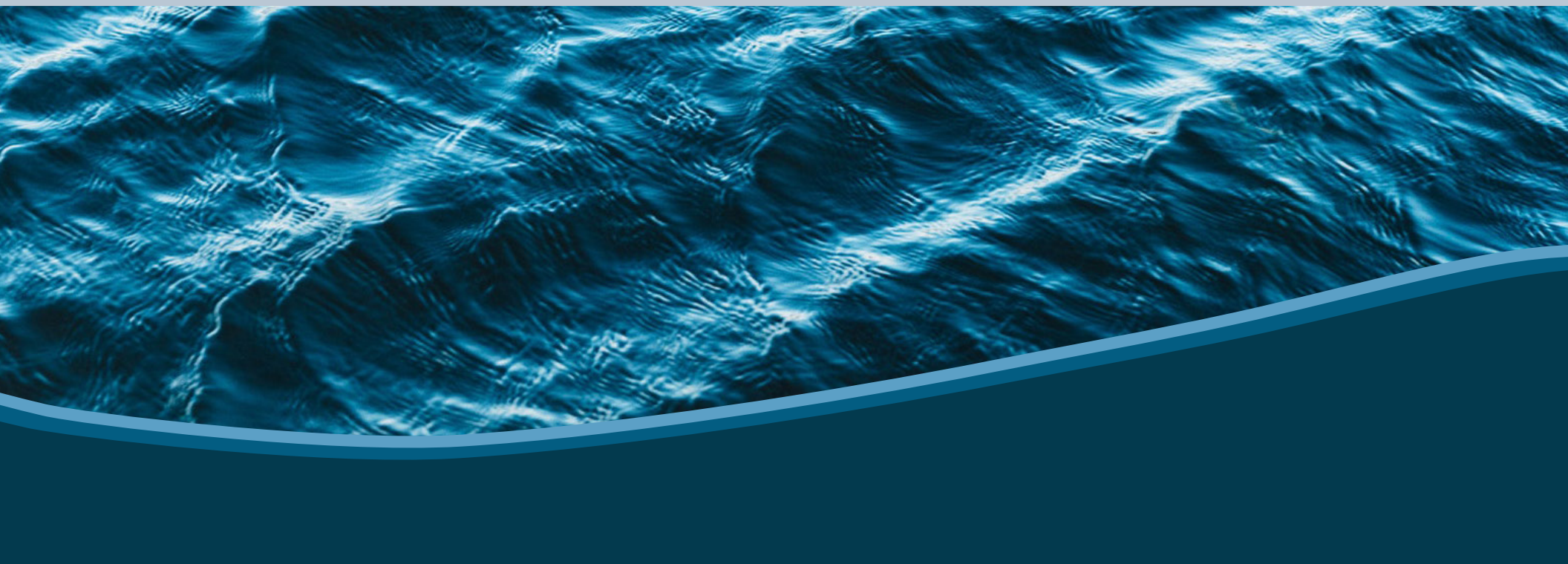


# Quarterly Oil and Gas Water Management Summary



Third Quarter 2017 (July - September)



## PURPOSE

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This *Quarterly Oil and Gas Water Management Summary* presents short-term water use and water licence data from the Q3 July to September 2017 period.

Previous annual water use reports and quarterly water use summaries are available on the BC Oil and Gas Commission website at [www.bcogc.ca](http://www.bcogc.ca).

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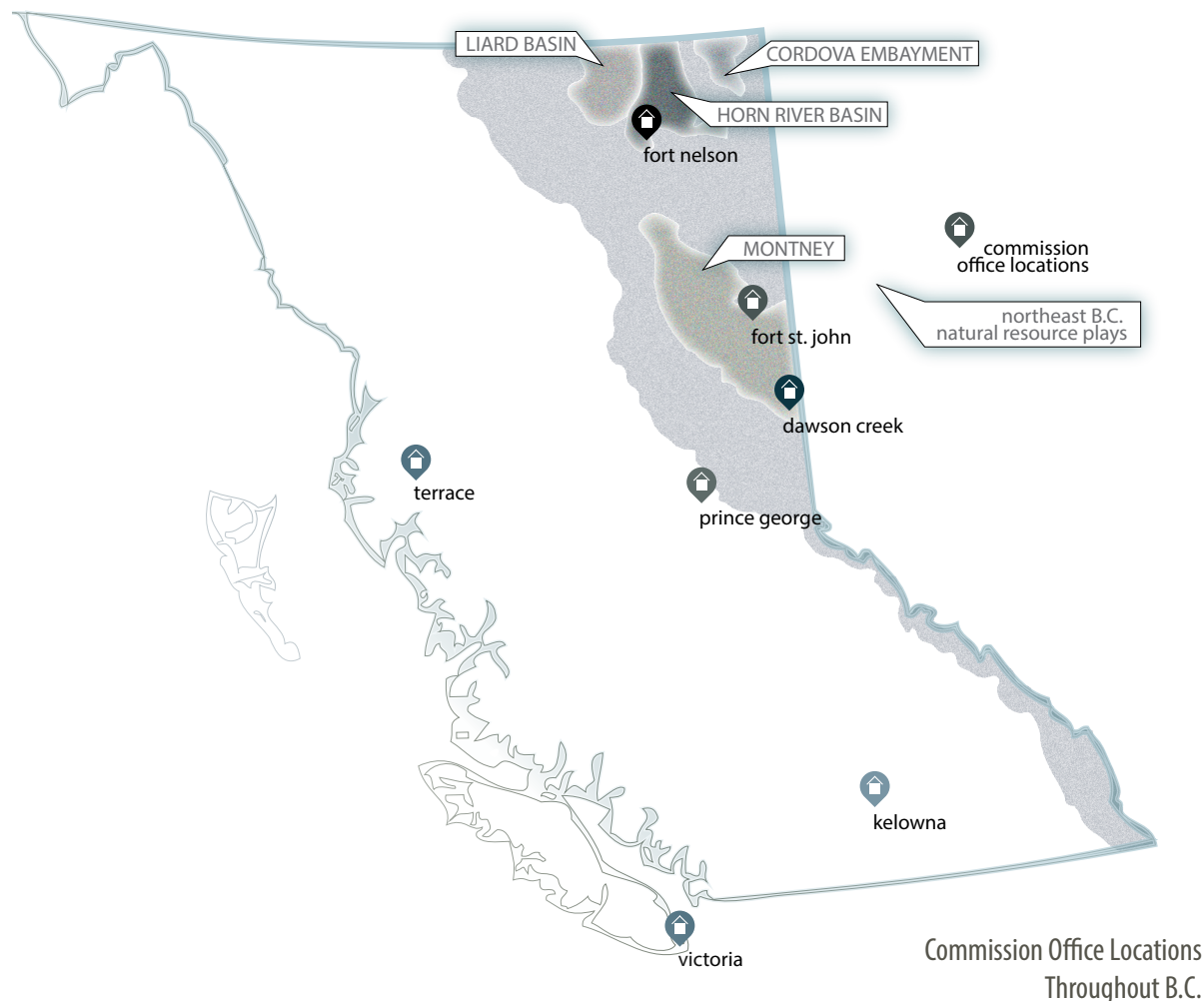
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# BC OIL AND GAS COMMISSION

The [BC Oil and Gas Commission](#) (Commission) is the provincial regulatory agency with responsibilities for regulating oil and gas activities in British Columbia, including exploration, development, pipeline transportation and reclamation.

The Commission's core services include reviewing and assessing applications for industry activity, consulting with First Nations, cooperating with partner agencies, and ensuring industry complies with provincial legislation and all regulatory requirements. The public interest is protected by ensuring public safety, respecting those affected by oil and gas activities, conserving the environment, and ensuring equitable participation in production.

The Commission is responsible for reviewing, assessing, and making decisions on water authorizations from both surface and subsurface water sources. The Commission has the expertise and tools to make informed water allocation decisions, and protecting and maintaining environmental and community water needs are its first priorities.



## HOW WATER IS USED

Water is used for various purposes in the oil and gas industry.



The largest use of water for oil and gas activities is for hydraulic fracturing.

However, water is used for other purposes, such as:



Seismic or geophysical exploration



Drilling



Machine washing



Dust control



Water floods (to enhance oil recovery)



Ice road freezing



Hydrostatic testing of pipelines

## HOW WATER IS ACCESSED

There are different ways the oil and gas industry may access water in British Columbia. Some methods are managed through provincial legislation, including:

- **Water licences** issued under the Water Sustainability Act (WSA) for surface and groundwater. The Commission has staff designated as Regional Water Managers with authority for issuing and administering long-term water licences.
- **Short-term surface water use or diversion approvals** issued under Section 10 of the WSA. Short-term water use is administered by the Commission.
- **Water source wells** authorized by the Commission under the Oil and Gas Activities Act (OGAA). Water source wells are a specific type of well where the water withdrawn is intended for injection into an underground formation to enhance oil or natural gas recovery.
- **Flowback water** that returns to the surface after being injected for hydraulic fracturing.
- **Produced water** that flows to the surface as a by-product of oil and gas production.

The oil and gas industry can access water by means outside of regulatory oversight:



- **Private agreements** can be made with landowners or others who have a source of surface water supply such as a dugout or a groundwater well. In some cases, private agreements may require a Waterworks water licence under the WSA.

## LONG-TERM WATER LICENCES AND USE

At the end of the third quarter of 2017, there were 23 active oil and gas related water licences, representing 25 withdrawal locations, held by 12 companies (Table 1).

The total annual licenced water volume was 21,959,242 m<sup>3</sup>.

A total of 1,187,127 m<sup>3</sup> of licenced water was reported as withdrawn in the first three quarters of the year (Table 1).

A break-down of water licence allocation and use by OGC Water Management Basin is listed in Table 4.

\* Changes to Q3 query parameters resulted in adjustments to Q1 and Q2 reported totals (former queries based on licence issue date - changed to permitted withdrawal date).

TABLE 1 - SUMMARY OF WATER LICENCE AND USE FOR OIL AND GAS ACTIVITIES FROM JANUARY TO SEPTEMBER 2017

	Q1	Q2	*Q3
<b>WATER LICENCE</b>			
Companies with Active Water Licences	11	12	12
Active Water Licences	21	23	23
Licensed Withdrawal Locations	22	25	25
Annual Volume Available for Use for Water Licences (m <sup>3</sup> )	19,859,242	21,959,242	21,959,242
Cumulative Volume Reported Used in 2017 (m <sup>3</sup> )	531,420	930,760	1,187,127

TABLE 2:  
OIL AND GAS RELATED WATER LICENCES THAT WITHDREW WATER FROM JULY TO SEPTEMBER 2017

LICENCE #	LICENCEE	SOURCE	OGC WATER MANAGEMENT BASIN	ANNUAL APPROVAL (m <sup>3</sup> /YR)	Q3 WATER USE (m <sup>3</sup> /YR)
C112155	Whitecap Resources Inc.	Peace River	Lower Peace River	1,825,000	174,823
C126568	Progress Energy Canada Ltd.	Williston Lake	Peace Arm	3,650,000	1,194
C132688	Canadian Natural Resources Limited	Charlie Lake	Lower Beatton River	394,000	11,745
C133155	Canbriam Energy Inc.	Williston Lake	Peace Arm	3,650,000	50,310
C133847	Progress Energy Canada Ltd.	Unnamed Creek	Cameron River	3,687	2,794
C133853	Progress Energy Canada Ltd.	Barker Creek	Upper Beatton River	7,264	1,186
C500022	Encana Corporation	Dam near Bissette Creek	Pouce Coupe River	32,000	14,315

## SHORT-TERM WATER APPROVAL AND USE

At the end of the third quarter of 2017, there were a total of 259 short-term water use approvals in place, representing 696 withdrawal locations, held by 43 companies (Table 3).

The total water volume associated with short-term approvals that were active on the last day of the quarter was 15,622,886 m<sup>3</sup>.

A total of 1,607,674 m<sup>3</sup> was reported as withdrawn by oil and gas operators during the first three quarters of 2017 (Table 3).

A break-down of short-term water approval and use by OGC Water Management Basin is listed in Table 4.

TABLE 3 - SUMMARY OF SHORT-TERM APPROVAL AND USE FOR  
OIL AND GAS ACTIVITIES FROM JANUARY TO SEPTEMBER 2017

	Q1	Q2	Q3
<b>SHORT-TERM</b> Companies with Active Approvals	45	42	43
Active Approvals	198	238	259
Approved Withdrawal locations	763	720	696
Volume Available for Use (m <sup>3</sup> )	13,030,214	16,198,738	15,622,886
Cumulative Volume Reported Withdrawn (m <sup>3</sup> )	271,537	818,700	1,607,674



# WATER SUSTAINABILITY ACT

The Water Sustainability Act (WSA) came into effect on Feb. 29, 2016, resulting in changes to surface water and groundwater allocation processes by the Commission. With the implementation of the WSA, the following regulations were created or revised and brought into force:

- Water Sustainability Regulation (replaces Water Regulation)
- Groundwater Protection Regulation (revised)
- Dam Safety Regulation (revised)
- Fees, Rentals and Charge Tariff Regulation (new)

The WSA modernizes the language of the Water Act and introduces a number of significant policy changes. Examples of key items that affect oil and gas activities include, but are not limited to:

- Water in a stream, and the percolation and flow of groundwater, are vested to the Crown.
- The regulatory scheme for the diversion and use of stream water is maintained and applied to both stream water and aquifer water.
- The rights of prior appropriation are retained – First In Time, First In Right (FITFIR).
- The consideration of the environmental flow needs of a stream in licensing decisions is mandated for all water allocation decisions related

to streams, and to aquifers “reasonably likely” of being hydraulically connected to a stream.

- Explicit notification, objection and appeal rights for short-term water use approvals and changes in and about a stream are specified (appeals are to the Environmental Appeal Board).
- Deep groundwater is exempted from the requirement for a water licence.
- New powers are created to be applied when streams are at risk of falling or have fallen below their critical environmental flow thresholds, to modify the existing precedence of water use for the purpose of protecting the aquatic ecosystem of streams and aquifers

and essential domestic uses (i.e., FITFIR can be overridden).

- Authority is provided to statutory decision makers to require environmental mitigation or offsetting when the diversion and use of water, or changes in and about a stream, are likely to have a significant adverse impact on the water quality, water quantity or aquatic ecosystem of a stream or aquifer.

As there are significant changes resulting from the implementation of the WSA, operators are strongly encouraged to review the document [Water Sustainability Act Applications Support for Operators](#). This supplemental outlines material changes to application manuals,



processes and fees, short-term water use approvals, water licensing, and the aforementioned regulations.

The WSA and its regulations may be viewed online:

[Water Sustainability Act](#)

[Water Sustainability Regulation](#)

[Water Sustainability Fees, Rentals and Charges Tariff Regulation](#)

[Groundwater Protection Regulation](#)

[Dam Safety Regulation](#)

## WATER LICENCE APPLICATIONS

### Water Licence Application

New Water Licence Application - Surface Water

New Water Licence Application - Groundwater

Existing Use Groundwater licence application

### Abandonment / Amendments (Changes) to an existing Water Licence

Abandonment

Apportionment

Change of Purpose

Change of Works

### Provide Additional Information

Provide Additional Information for your Application

### Administration of Surface Water Rights

Licence Transfer of Ownership or Name Change

### Abandon Application

Abandon Your Application

Applications, abandonments, and amendments for water licences are now submitted through an online form at the following web address:

[www.bcogc.ca/public-zone/water-information/water-licences](http://www.bcogc.ca/public-zone/water-information/water-licences)



TABLE 4 - SUMMARY OF WATER ALLOCATION  
AND USE FOR OIL AND GAS ACTIVITIES IN 2017,  
ORGANIZED BY OGC WATER MANAGEMENT BASIN  
(Page 1 of 4)

		SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION				OIL AND GAS RELATED WATER LICENCES						
MAJOR and Sub-Basin Name		NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³) FOR LOCATIONS ACTIVE ON 9/30/2017	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
BEATTON RIVER (sub-basin of Peace River)												
Upper Beatton River		13	1,012,770	0.203%	86,183	0.017%	5	803,962	0.161%	175,575	0.035%	499,408,440
Middle Beatton River		26	307,650	0.123%	54,909	0.022%						249,152,995
Middle Beatton Total (incl. Upper Beatton)		39	1,320,420	0.176%	141,092	0.019%	5	803,962	0.107%	175,575	0.023%	748,561,435
Milligan Creek		24	367,775	0.192%	122	0.000%						191,536,686
Blueberry River		41	730,150	0.249%	29,859	0.010%						293,278,540
Doig River		6	13,732	0.004%	2,384	0.001%						323,069,523
Lower Beatton River		20	132,566	0.096%	19,430	0.014%	1	394,000	0.285%	57,665	0.042%	138,262,629
BEATTON TOTAL		130	2,564,643	0.151%	192,887	0.011%	6	1,197,962	0.071%	233,240	0.014%	1,694,708,813
HALFWAY RIVER (sub-basin of Peace River)												
Chowade River												327,027,527
Upper Halfway River												795,962,409
Upper Halfway Total (includes Chowade)		0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	1,122,989,936
Graham River		1	4,800	0.001%	1,137	0.000%						860,627,172
Cameron River		25	883,257	0.395%	68,095	0.030%	1	3,687	0.002%	3,274	0.001%	223,679,567
Lower Halfway River		12	516,961	0.341%	7,599	0.005%						151,526,991
HALFWAY TOTAL		38	1,405,018	0.060%	76,831	0.003%	1	3,687	0.000%	3,274	0.000%	2,358,823,666
MOBERLY RIVER (sub-basin of Peace River)												
Moberly River		4	43,102	0.011%	790	0.000%						391,714,995
MOBERLY TOTAL		4	43,102	0.000%	790	0.000%	0	0	0.000%	0	0.000%	391,714,995
PINE RIVER (sub-basin of Peace River)												
Burnt River												737,930,022
Sukunka River		3	20,000	0.002%	7,032	0.001%						1,047,282,572
Sukunka River Total (includes Burnt)		3	20,000	0.001%	7,032	0.000%	0	0	0.000%	0	0.000%	1,785,212,594
Upper Pine River		5	57,100	0.004%	1,290	0.000%						1,466,884,035
Murray River		3	20,096	0.001%	266	0.000%						2,698,285,017
Lower Pine River		26	442,101	0.321%	22,588	0.016%	1	650,000	0.472%	0	0.000%	137,619,889
PINE TOTAL		37	539,297	0.019%	31,176	0.001%	1	650,000	0.011%	0	0.000%	6,088,001,535

SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION						OIL AND GAS RELATED WATER LICENCES					
MAJOR and Sub-Basin Name	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³) FOR LOCATIONS ACTIVE ON 9/30/2017	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
<b>KISKATINAW RIVER</b> (sub-basin of Peace River)											
West Kiskatinaw River											117,515,115
East Kiskatinaw River	1	5,000	0.005%	0	0.000%						105,452,962
Middle Kiskatinaw River	6	1,233,536	2.189%	6,875	0.012%						56,347,972
<b>Middle Kiskatinaw Total (incl. West &amp; East)</b>	<b>7</b>	<b>1,238,536</b>	<b>0.443%</b>	<b>6,875</b>	<b>0.002%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>279,316,049</b>
Lower Kiskatinaw River	14	2,437,467	2.719%	182,798	0.204%	4	2,120,969	2.366%	0	0.000%	89,659,847
<b>KISKATINAW TOTAL</b>	<b>21</b>	<b>3,676,003</b>	<b>0.996%</b>	<b>189,673</b>	<b>0.051%</b>	<b>4</b>	<b>2,120,969</b>	<b>0.575%</b>	<b>0</b>	<b>0.000%</b>	<b>368,975,896</b>
<b>PEACE RIVER</b>											
Peace Arm						3	9,125,000		258,533		N/A
Upper Peace River	1	780,000	0.002%	132,723	0.000%						36,423,413,429
Lynx Creek											30,436,635
Farrell Creek	5	82,300	0.090%	2,845	0.003%						91,018,843
Cache Creek	2	12,686	0.017%	3,300	0.004%	1	185,022	0.248%	0	0.000%	74,603,546
Pouce Coupe River	12	2,257,002	0.883%	122,363	0.048%	2	132,754	0.052%	27,715	<b>0.011%</b>	255,686,202
Lower Peace River	9	1,562,427	1.365%	813,423	0.711%	4	3,048,348	2.663%	664,365	0.580%	114,470,012
<b>PEACE TOTAL</b> (incl. Kisk/Pine/Moberly/Half/Beaton)	<b>259</b>	<b>12,922,478</b>	<b>0.027%</b>	<b>1,566,011</b>	<b>0.003%</b>	<b>22</b>	<b>16,463,742</b>	<b>0.034%</b>	<b>1,187,127</b>	<b>0.002%</b>	<b>47,891,853,572</b>
<b>SMOKY RIVER</b>											
Smoky River	4	18,500	0.001%	4	0.000%	1	2,500	0.000%	0	0.000%	2,669,506,123
<b>SMOKY TOTAL</b>	<b>4</b>	<b>18,500</b>	<b>0.001%</b>	<b>4</b>	<b>0.000%</b>	<b>1</b>	<b>2,500</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>2,669,506,123</b>
<b>MUSKWA RIVER</b> (sub-basin of Fort Nelson River)											
Upper Muskwa River											1,725,201,511
Middle Muskwa River											1,973,711,816
<b>Middle Muskwa Total (incl. Upper Muskwa)</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>3,698,913,327</b>
Lower Muskwa River											646,841,560
<b>MUSKWA TOTAL</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>4,345,754,887</b>
<b>PROPHET RIVER</b> (sub-basin of Fort Nelson River)											
Upper Prophet River	1	2,250	0.000%	0	0.000%						1,470,271,289
Middle Prophet River	5	30,700	0.005%	0	0.000%						621,428,680
<b>Middle Prophet Total (incl. Upper Prophet)</b>	<b>6</b>	<b>32,950</b>	<b>0.002%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>2,091,699,969</b>
Lower Prophet River	6	411,510	0.151%	700	0.000%						272,262,427
<b>PROPHET TOTAL</b>	<b>12</b>	<b>444,460</b>	<b>0.019%</b>	<b>700</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>2,363,962,396</b>

MAJOR and Sub-Basin Name	SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION					OIL AND GAS RELATED WATER LICENCES					
	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³) FOR LOCATIONS ACTIVE ON 9/30/2017	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
<b>SIKANNI CHIEF RIVER</b> (sub-basin of Fort Nelson River)											
Upper Sikanni Chief River						1	2,993,000	0.371%	0	0.000%	807,771,692
Middle Sikanni Chief River	24	387,375	0.041%	7,185	0.001%						949,755,794
<b>Middle Sikanni Chief Total (incl. Upper Sikanni)</b>	<b>24</b>	<b>387,375</b>	<b>0.022%</b>	<b>7,185</b>	<b>0.000%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.170%</b>	<b>0</b>	<b>0.000%</b>	<b>1,757,527,486</b>
Lower Sikanni Chief	4	9,200	0.001%	2,540							875,678,142
<b>SIKANNI CHIEF TOTAL</b>	<b>28</b>	<b>396,575</b>	<b>0.015%</b>	<b>9,725</b>	<b>0.000%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.114%</b>	<b>0</b>	<b>0.000%</b>	<b>2,633,205,628</b>
<b>FORT NELSON RIVER</b>											
Kahntah River	14	87,400	0.022%	0	0.000%						400,582,903
Fontas River											591,531,903
<b>Fontas Total (includes Kahntah)</b>	<b>14</b>	<b>87,400</b>	<b>0.009%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>992,114,806</b>
Klua Creek											402,135,448
Upper Fort Nelson River	1	10,000	0.004%	0	0.000%						276,181,026
<b>Upper Fort Nelson Total (incl. Sikanni Chief Total, Kahntah, Fontas, Klua)</b>	<b>43</b>	<b>493,975</b>	<b>0.011%</b>	<b>9,725</b>	<b>0.000%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.070%</b>	<b>0</b>	<b>0.000%</b>	<b>4,303,636,908</b>
Snake River											310,763,522
Sahtaneh River	3	22,500	0.005%	2,337	0.000%						474,904,729
Middle Fort Nelson River	8	47,825	0.009%	7,666	0.001%						515,348,901
<b>Middle Ft Nelson Total (incl. Upper Ft. Nelson total, Muskwa Total, Prophet Total, Snake, Sahtaneh)</b>	<b>66</b>	<b>1,008,760</b>	<b>0.008%</b>	<b>20,428</b>	<b>0.000%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.024%</b>	<b>0</b>	<b>0.000%</b>	<b>12,314,371,343</b>
Kiwigana River	10	14,000	0.003%	490	0.000%						441,657,543
Lower Fort Nelson River	5	22,000	0.007%	0	0.000%						312,768,938
<b>FORT NELSON TOTAL</b>	<b>81</b>	<b>1,044,760</b>	<b>0.008%</b>	<b>20,918</b>	<b>0.000%</b>	<b>1</b>	<b>2,993,000</b>	<b>0.023%</b>	<b>0</b>	<b>0.000%</b>	<b>13,068,797,824</b>
<b>LIARD RIVER</b>											
Muncho River											551,551,360
Upper Liard River											33,125,817,465
<b>Upper Liard Total (incl. Muncho)</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0</b>	<b>0.000%</b>	<b>0</b>	<b>0.000%</b>	<b>33,677,368,825</b>
Grayling River											630,833,914
Upper Toad River											1,521,055,576
Racing River											1,488,336,681
Lower Toad River											419,472,722
Beaver River											10,862,659,426
Middle Liard River											463,652,312

MAJOR and Sub-Basin Name	SHORT-TERM WATER USE APPROVALS - BC OIL AND GAS COMMISSION					OIL AND GAS RELATED WATER LICENCES					
	NUMBER OF APPROVED WITHDRAWAL LOCATIONS	TOTAL VOLUME APPROVED (m³) FOR LOCATIONS ACTIVE ON 9/30/2017	TOTAL VOLUME APPROVED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN AS % OF MEAN ANNUAL RUNOFF	NUMBER OF LICENCED WITHDRAWAL LOCATIONS	TOTAL VOLUME LICENCED (m³)	TOTAL VOLUME LICENCED as % of MEAN ANNUAL RUNOFF	TOTAL VOLUME WITHDRAWN IN 2017 (m³)	TOTAL VOLUME WITHDRAWN as % of MEAN ANNUAL RUNOFF	MEAN ANNUAL RUNOFF (m³)
LIARD RIVER con't											
Middle Liard Total (incl. Upper Liard Total, Grayling, Upper Toad, Racing, Lower Toad, Beaver)	0	0	0.000%	0	0.000%	0	0	0.000%	0	0.000%	49,063,379,456
Capot-Blanc Creek	4	40,000	0.022%	0	0.000%						183,879,851
Dunedin River	1	500	0.000%	229	0.000%						820,464,167
Lower Liard River	8	62,690	0.005%	0	0.000%						1,236,634,664
LIARD TOTAL (incl. Fort Nelson)	94	1,147,950	0.002%	21,147	0.000%	1	2,993,000	0.005%	0	0.000%	64,373,155,962
PETITOT RIVER											
Sahdoanah River	45	35,380	0.014%	2,967	0.001%						252,625,362
Upper Petitot River	62	88,085	0.006%	0	0.000%						1,476,579,488
Tsea River	50	47,705	0.011%	432	0.000%	1	2,500,000	0.576%	0	0.000%	434,062,484
Middle Petitot River	24	128,825	0.018%	0	0.000%						698,562,753
Middle Petitot Total (incl. Sahdoanah, Upper Petitot, Tsea)	181	299,995	0.010%	3,399	0.000%	1	2,500,000	0.087%	0	0.000%	2,861,830,087
Lower Petitot River	33	110,800	0.012%	2,180	0.000%						904,314,069
PETITOT TOTAL	214	410,795	0.011%	5,579	0.000%	1	2,500,000	0.066%	0	0.000%	3,766,144,156
HAY RIVER											
Upper Kotcho River	3	5,500	0.002%	0	0.000%						311,519,217
Kyklo River	2	13,000	0.009%	0	0.000%						145,897,691
Shekilie River	28	181,600	0.040%	0	0.000%						450,747,494
Lower Kotcho River	2	7,500	0.002%	3,211	0.001%						311,519,217
Lower Kotcho Total (includes Upper Kotcho, Kyklo, Shekilie)	35	207,600	0.017%	3,211	0.000%	0	0	0.000%	0	0.000%	1,219,683,619
Hay River	30	193,500	0.036%	1,683	0.000%						538,672,352
HAY TOTAL	65	401,100	0.023%	4,894	0.000%	0	0	0.000%	0	0.000%	1,758,355,971
CHINCHAGA RIVER											
Chinchaga River	30	109,097	0.100%	5,893	0.005%						109,492,680
CHINCHAGA TOTAL	30	109,097	0.100%	5,893	0.005%	0	0	0.000%	0	0.000%	109,492,680
OTHER (outside Northeast B.C.)	30	612,966		4,146		0	0				N/A
GRAND TOTAL	696	15,622,886	0.013%	1,607,674	0.001%	25	21,959,242	0.018%	1,187,127	0.001%	120,568,508,464



Previous annual water reports and quarterly updates  
are available on the Commission's website at:  
<http://www.bcogc.ca/public-zone/water-information>

For specific questions or enquiries  
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